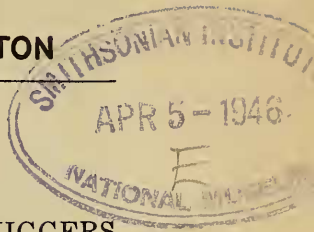


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



TAXONOMIC NOTES ON AMERICAN CHIGGERS
(LARVAE OF THE MITE FAMILY TROMBICU-
LIDAE), INCLUDING THE REDESCRIPTION
OF A GENUS AND THE DESCRIPTIONS OF TWO
NEW SPECIES.

H. E. EWING.

In addition to the redescription of the genus *Euschöngastia* Ewing and the description of a new species of *Trombicula* Berlese and *Acomatacarus* Ewing notes are here presented on generic and subgeneric characters and the relationship of *Acariscus flui* (Van Thiel) and *Acariscus hominis* (Ewing).

Generic and Subgeneric Characters in the Family Trombiculidae.

More recent work on the taxonomy of the trombiculid mites, particularly the work done by means of the oil immersion lens and mounting media with better refractive indices than those formerly used has brought to light the fact that many of our generic and specific descriptions made in former years are seriously inadequate and inaccurate. For this reason the present writer is now reviewing the descriptions of all genotypes and many others, noting specific characters, previously neglected, overlooked or improperly described, and listing them for the evaluation of their possible subgeneric or generic value. In giving the description of a species or a genus, often it is of almost as much importance to state the absence of a structure, as it is to describe it fully if present.

The Genus *Euschöngastia* Ewing.

The genus *Euschöngastia* Ewing was established in 1938. The outstanding character of this genus is the peculiar palpal claw. This structure in the type species is strongly bent inward toward the tip and has several accessory prongs grouped together on the outer curve of the claw near its apex. The single included species was described from eight engorged specimens taken from a chipmunk, *Eutamias* sp. at Boise,

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Idaho and three partly engorged specimens taken from a "mouse" at San Simeon, California.

Recently several well mounted, undetermined specimens belonging to this genus have come to hand. In studying them it was soon noticed that my former diagnosis needs revision, hence there is here given a formal description of the genus *Euschöngastia*.

1938. *Euschöngastia* Ewing, Jour. Wash. Acad. Sci., vol. 28, p. 293.

Chelicera stout; blade large, broad at base, sharp at apex, toothless or with a minute dorsal tooth, and extending beyond apex of basal segment. Galeal seta simple or branched. Palpus somewhat stout; palpal femur angulate laterally and with posterior margin broadly and deeply incurved; palpal claw with more than three prongs, the accessory prongs frequently being paired. No tracheae or spiracles. Dorsal plate with a large, crescentic ridge in front of each pseudostigma and a single median barbed or branched seta on or near its anterior margin. Antero lateral setae of dorsal plate large, barbed, similar to posterolateral setae; pseudostigmatic organs strongly clavate or capitate. Eyes poorly developed or absent. Abdomen without posterodorsal plates; dorsal setae numerous, humerals not situated in row II, rows II and III each with ten or more setae. Legs of median length; each coxa with a semi-plumose seta; tarsi three-clawed, middle claw being more slender than other two.

Type species.—*Euschnögastia americana* Ewing 1938.

Included species.—Besides the type species this genus includes *Euschöngastia sciuricola* (Ewing) (type host, red squirrel, *Sciurus hudsonicus richardsonii*, type locality, Florence, Montana) and possibly *Neoschöngastia blarinae* (Ewing) (type host, short-tailed shrew, *Blarina brevicauda*, type locality, Washington, D. C. Three partly engorged specimens taken from a "mouse" at San Simeon, California and regarded as being the same as *Euschöngastia americana* have been found to differ slightly from the specimens taken on the type host at the type locality of *Euschöngastia americana*.

Acariscus flui (Van Thiel 1930) and *Acariscus hominis* (Ewing 1933).

A recent study of additional material of *Acariscus hominis* (Ewing 1933) sent in by Lt. Charles D. Michener, Sn. C., shows that this species varies considerably in regard to the number and arrangement of the dorsal setae behind row IV and in the development of the second pair of eyes. In the type material of *hominis* the second eyes are very slightly smaller than the first while in some of the specimens sent in by Lt. Michener they are much smaller. The inner prong of the palpal claw also shows considerable variation being somewhat smaller than in the types.

Of particular interest among the material sent in by Lt. Michener are four specimens taken on grass at Santa Rosa, Colon Province, Panama. Except for an extra seta on one side in row III, the chaetotaxy of the dorsum of abdomen of all four specimens is exactly the same being 2, 8, 8, 8, 6, 4, 2, not counting the posterior marginals. In these specimens from grass the posterior eyes are much smaller than the anterior.

Possibly this material represents *Acariscus flui* (Van Thiel) but the anterior margin of the dorsal plate is incurved on each side of the middle as in *hominis* instead of being outwardly rounded or convex as in *A. flui*.

There is a tendency for the dorsal plate to be more heavily sclerotized in *A. hominis* specimens from the southeastern part of the United States. In some specimens taken from a quail at Savannah, Georgia, this increased sclerotization is so pronounced that an inverted crescentic or angulate line is formed behind the median seta delimiting a distinctive anterior area. Also this increased sclerotization in the specimens from Savannah has resulted in forming an irregular yet more or less distinct bar extending from one pseudostigma to the other.

The variations here noticed in *Acariscus hominis* indicate that there is a rather closely related *flui-hominis* complex which may consist of two closely related species, one of which has two varieties, or that the whole complex consists of three or possibly more varieties of the same species.

A NEW SPECIES OF TROMBICULA BERLESE.

The genus *Trombicula* Berlese (1905) is here considered in a restricted sense to include only those species in which the palpal claw is trifurcate and the abdominal setae usually over thirty.

Trombicula bakeri, new species.

(Fig. 1.)

Chelicera with large basal segment that is rounded laterally and ends dorsally in a stout, hooklike process; piercing apparatus of chelicera a curved blade with a single dorsal tooth and apparently no ventral tooth. Palpus stout; palpal femur somewhat angulate laterally; first seta bilaterally plumose, curved, and extending forward almost to the end of the palpal femur; second seta almost straight, with two lateral branches; palpal claw strongly curved, trifurcate, larger accessory prong almost straight, situated dorsally between the other two prongs and almost reaching tip of main prong, smaller accessory prong also almost straight, situated laterally next to larger prong. Galeal seta simple. Tracheae and spiracles absent. Dorsal plate minutely granular, with anterior margin about straight, the sides slightly diverging posteriorly, and posterior margin evenly rounded; anterolateral seta with lateral branches, when depressed backward reaching beyond base of posterolateral by almost one-third its length; submedian seta similar to antero-lateral and when depressed extending almost to posterior margin of dorsal plate, posterolateral seta similar to anterolateral but somewhat longer; pseudostigmata each situated in front of an oblique slit and on a level with posterolateral setae; pseudostigmatic organ flagelliform, and slightly longer than posterolateral seta, with only two or three short lateral branches. Eyes very large, the anterior and posterior being fused; ocular plate vestigial. Dorsal setae 2, 6, 6, 6, 4, 2, 2, 2 (counting latero-marginals). Ventral setae 2, 2, 8 (or 9), 2, 8, 2, 2, 2. All coxal setae bilaterally subplumose, there being one on each coxa. Tarsal armature as

usual. Length of dorsal plate 0.074 mm.; greatest width, 0.128 mm. Length of unengorged larva, 0.315 mm.; width, 0.238 mm.

Type host.—Larva unattached.

Type locality.—Mount Popocatepetl (about 9,100 feet; west slope), Mexico.

Type slide (holotype).—U. S. National Museum No. 1517.

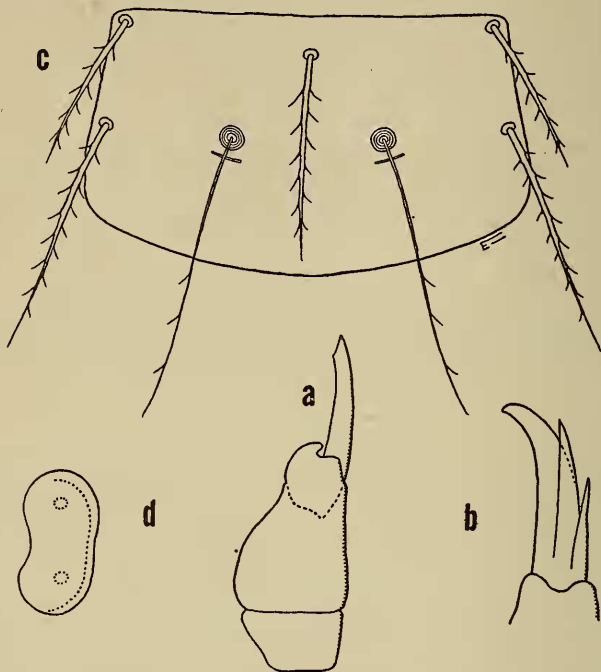


PLATE III—*Trombicula bakeri*, new species; *a*, dorsal view of left palpal claw; *b*, dorsal view of right palpal claw; *c*, dorsal plate; *d* right eyes. All greatly but not equally enlarged.

Description based on a single specimen taken along with other mites in moss at type locality, December 29, 1942, by E. W. Baker, for whom the species is named. *T. bakeri* is an unusual species in two respects, in having the anterior and posterior eyes fused and in the arrangement of both dorsal and ventral setae into so many transverse rows. This latter condition is doubtless due to the migration of certain setae from the rows to which they belong phylogenetically. This new species is not closely related to any known species of *Trombicula*.

A NEW SPECIES OF ACOMATACARUS EWING.

The genus *Acomatacarus* Ewing (1942) is a derivative of the old genus *Leeuwenhoekia* Oudemans (1911). It is noted particularly for the presence of tracheae and a pair of spiracles which open laterally in front of the first pair of coxae.

Acomatacarus galli, new species.

(Fig. 2.)

Piercing apparatus of chelicera a broad sharply pointed blade with a single ventral tooth and three minute, appressed dorsal teeth. Palpus not swollen; femur broadly rounded along outer margin; first seta bilaterally semiplumose, curved, extending forward for about one-third its length beyond distal margin of palpal femur; second seta similar to first, situated near middle of patella and extending beyond distal margin of same by about two-thirds its length; palpal claw bifurcate, outer accessory prong conspicuous, curved, slender but falling far short of reaching the tip of primary prong. Galeal seta simple. Tracheae and spiracles present, the latter each with a conspicuous atrium. Dorsal plate large, sides slightly diverging posteriorly and posterior margin angulate; anterior process oval in front, total length of process less than distance from anterolateral seta to submedian seta; anterolateral seta subplumose, when depressed extending backward about to pseudostigma, situated considerably nearer submedian seta than posterolateral seta; submedian seta similar to anterolateral, when depressed extending to pseudostigma; posterolateral seta similar to anterolateral but slightly longer; pseudostigmata each cuplike and slightly in front of a level with posterolateral setae; pseudostigmatic organ fine, threadlike, simple, slightly longer than posterolateral seta. Eyes well developed, posterior smaller than anterior and situated about its diameter from the latter; ocular plate well developed. Dorsal setae very numerous, 80 to 90, few being arranged in rows; no row II or III. All coxal setae semiplumose there being two on coxa I, one on coxa II, and one on coxa III. Tarsal claws as usual.

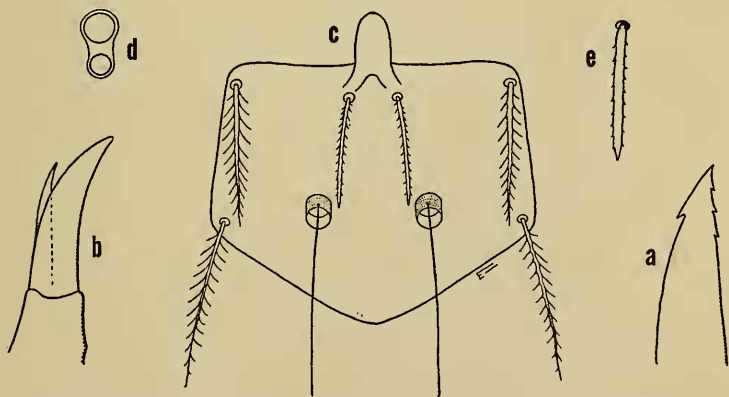


PLATE IV.—*Acomatacarus galli*, new species; a, dorsal oblique view of blade of chelicera; b, dorsal view of left palpal claw; c, dorsal plate; d, eyes; e, seta from posterior part of dorsum of abdomen. All greatly but not equally enlarged.

Length of dorsal plate (from tip of anterior process to tip of posterior angle), 0.076 mm.; greatest width of dorsal plate, 0.081 mm.; length of partly engorged individual, 0.37 mm.; width, 0.24 mm.

Type host.—"Chicken."

Type locality.—Uvalde, Texas.

Type slide (cotypes).—U. S. National Museum No. 1516.

Described from four cotypes mounted on the same slide with two specimens of *Eutrombicula alfreddugèsi* (Oudemans). They were taken from type host at type locality by E. Lester, January 13, 1943.

Only two species of *Acomatacarus* are known from the New World. They are separated by means of the following key:

Dorsal plate with posterior margin broadly rounded; a slightly curved ridge in front of each pseudostigma; first and second palpal setae simple. *A. arizonensis* Ewing 1942

Dorsal plate angulate posteriorly; no ridge in front of each pseudostigma; first and second palpal setae unilaterally semiplumose. . . .

A. galli, new species